

## **REMARKS**

### **Claim rejections under 35 USC § 102**

Claims 22 and 27 stand rejected under 35 USC §102(b) as being anticipated by Dolgonos et al (US 2002/0137464).

The independent claims are amended to recite the feature of optical multiplexing using polarization diversity. Basis for this feature (a preferred embodiment) is found at p.23, lines 27-33 and p.25, lines 16-19 of the description as filed.

This feature is not disclosed in either of the cited prior art references (Dolgonos and Smart) alleged by the Examiner to describe OFDM optical sub-carrier multiplexed communication. The independent claims are therefore novel, at least by virtue of this feature. Note that applicants do not concede that any of the originally filed claims lacked novelty.

### **Claim rejections under 35 USC § 103**

The remaining claims (apart from those which have been withdrawn by the Examiner from further consideration) stand rejected under 35 USC § 103(a) as being unpatentable over either Smart et al (US 2002/0041637) or Dolgonos, in combination with one or more other cited prior art references.

As discussed above, all independent claims have been amended to recite the feature of optical multiplexing using polarization diversity.

As noted at p.23 of the specification, the use of polarization multiplexing maximizes the bandwidth of the fibre channel. In particular, transmitting on two orthogonal polarisations permits the capacity of the communications system to be doubled. The use of OFDM as a sub-carrier modulation scheme for an optical link enables data to be transmitted at a far higher rate than was possible with RF-band OFDM signals (of the type described in each of the cited prior art documents). The combination of OFDM used in this way with polarization diversity doubles the already-high data rate, leading to rates well

beyond those known in the prior art in the field of optical (not to mention RF) communications. By virtue of the step-change in data rates enabled by this combination of features (in addition to the increased tolerance to dispersion, as described at p18, line 28), applicants respectfully submit that the amended independent claims are non-obvious.

Again, please note that the above argument and associated amendments are not intended to concede in any way that the subject matter of the originally filed claims was obvious.

Dependent claims are non-obvious at least by virtue of their dependency on a non-obvious independent claim.

#### **Drawing objections under 37 CFR 1.84**

Figs. 2 and 4-7 stand objected to under 37 CFR 1.84(n) and 1.84(o) as lacking sufficient descriptive labelling. Replacement drawings are submitted herewith. The figures have been amended to address this objection. Unlabelled blocks in Figs. 2-7 have been labelled, as far as possible.

#### **Drawing objections under 37 CFR 1.83**

The drawings as a whole stand objected to under 37 CFR 1.83(a) as not showing every feature of the invention specified in the claims. Replacement drawings are enclosed herewith. The structure of the optical modulator recited in claim 12 is now illustrated in Fig. 2. Claim 31 is cancelled, rendering moot the objection to the absence of the corresponding features from the drawings.

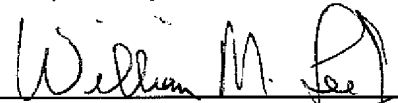
#### **Miscellaneous**

Lastly, applicants note that the Examiner did not list Shpantzer et al. (US 2002/0137464) in the notice of references cited, despite having relied on this reference in arguments in the office action (for example. at p.29, part 25).

In view of the fact that all of the Examiner's comments have been addressed,  
further and favorable reconsideration is respectfully requested.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "William M. Lee, Jr.", written over a horizontal line.

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